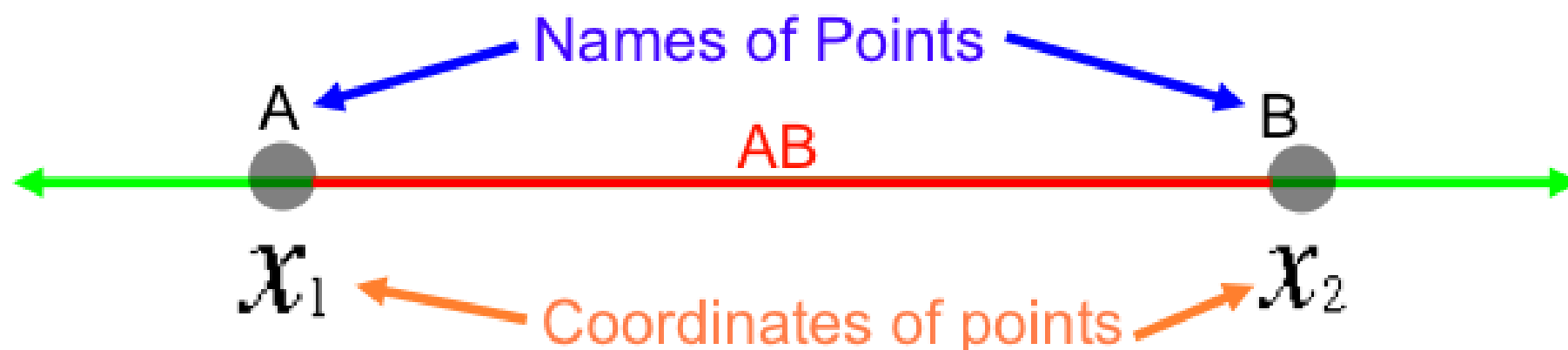


## 1.2 Use Segments and Congruence

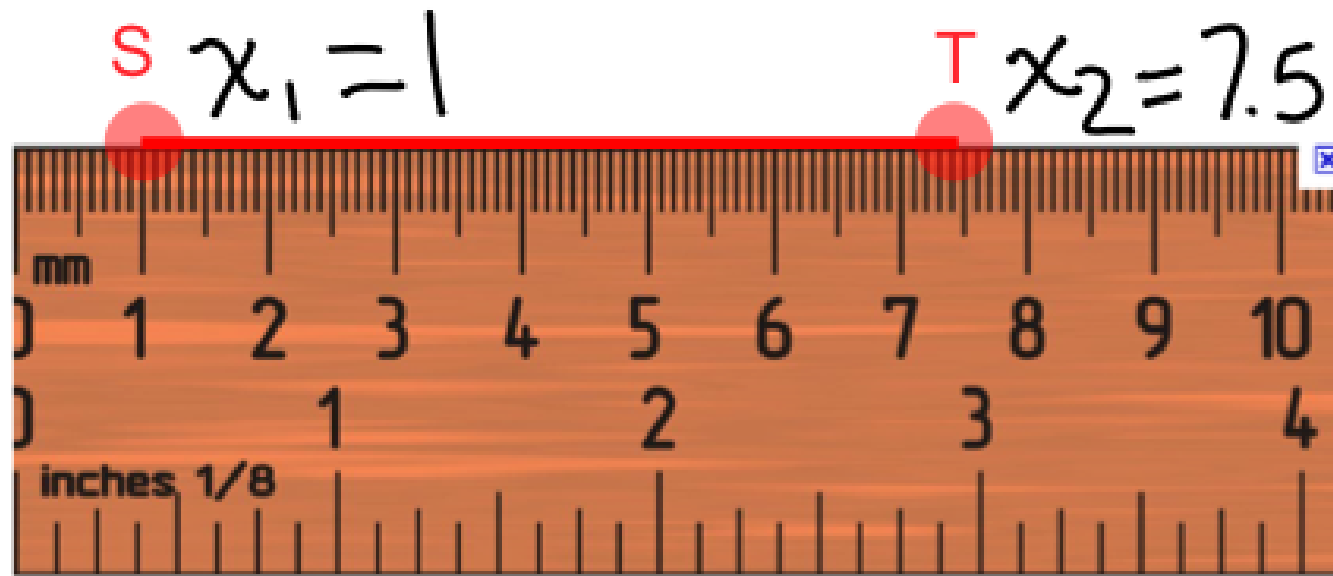
Postulate, or axiom: a rule that is accepted without proof

### Postulate 1: Ruler Postulate

- The points on a line can be matched one to one with the real numbers.
- The real number that corresponds to a point is the coordinate of the point.
- The distance between points A and B, written as AB, is the absolute value of the difference of the coordinates of A and B. So,  $AB = |x_2 - x_1|$



Ex 1: Apply the Ruler Postulate: Measure the length of  $\overline{ST}$  to the nearest tenth of a centimeter.



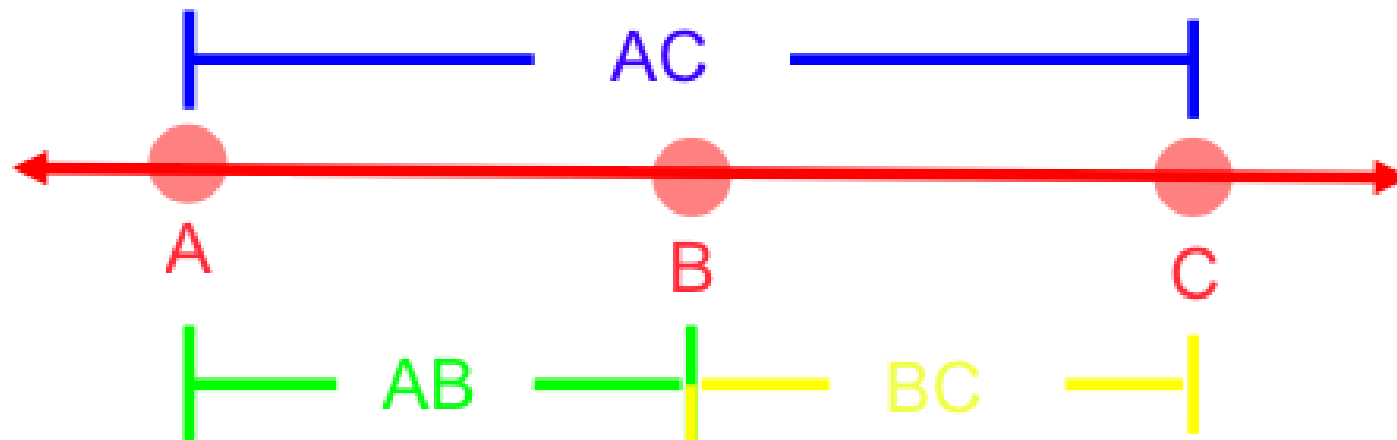
$$\begin{aligned} ST &= |7.5 - 1| \\ &= |6.5| = 6.5 \text{ cm} \end{aligned}$$

# Adding Segment Lengths

\*Note: When three points are collinear, you can say that one point is *between* the other two.

## **Postulate 2: Segment Addition Postulate**

- If B is between A and C, then  $AB + BC = AC$ .
- If  $AB + BC = AC$ , then B is between A and C.



Ex 2: **MODEL AIRPLANE** In 2003, a remote-controlled model airplane became the first ever to fly nonstop across the Atlantic Ocean. The map shows the airplane's position at three different points during its flight.

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#33



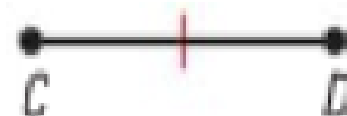
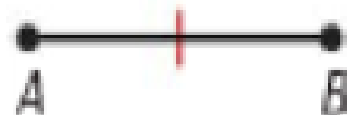
- Find the total distance the model airplane flew.
- The model airplane's flight lasted nearly 38 hours. Estimate the airplane's average speed in miles per hour.

a)  $AC = |1282 + 601| = |1883| = 1883 \text{ mi}$

b)  $s = \frac{d}{t} = \frac{1883}{38} = 49.55 \text{ mph}$

# Congruent Segments

-Line Segments that have the same length



Lengths are equal.

$$AB = CD$$



"is equal to"

Segments are congruent.

$$\overline{AB} \cong \overline{CD}$$



"is congruent to"

2/1

Ex 3:

Plot

J(-3,4)

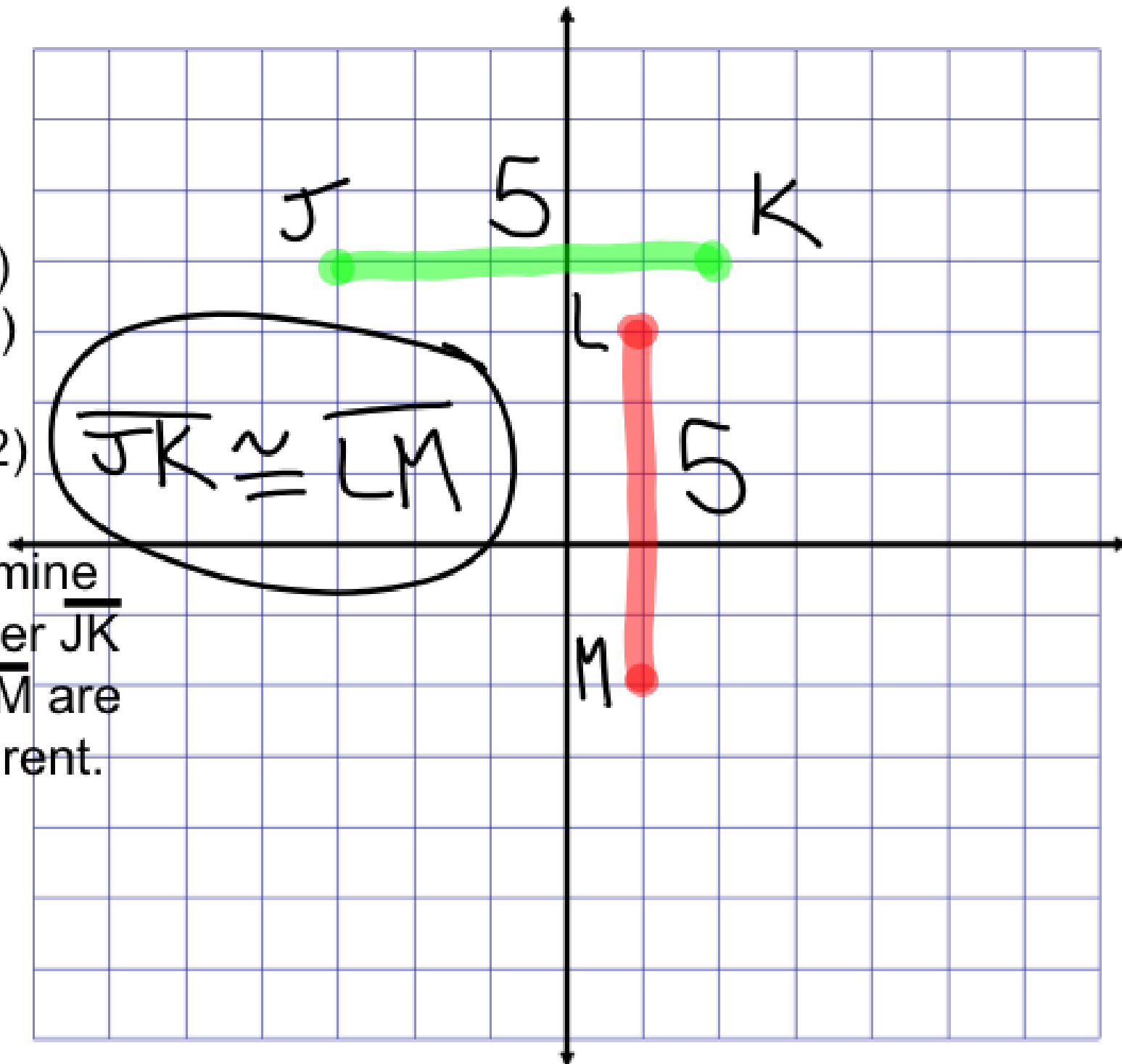
K(2, 4)

L(1,3)

M(1,-2)

$$\overline{JK} \approx \overline{LM}$$

Determine  
whether  $\overline{JK}$   
and  $\overline{LM}$  are  
congruent.



Homework: p.12-13 #1-12 all, 14-30 even